

BETTY

As Typhoon Alice approached the Philippine Islands on the 16th of September, another tropical circulation was detected in the monsoonal trough some 200 nm south of Guam. Moving northward at nearly 20 kt, this disturbance passed within 50 nm of Guam early on the 17th. By the afternoon of the 17th the circulation, now T.D. 14, turned sharply to the west as it approached the southern periphery of the subtropical ridge. T.D. 14 attained tropical storm intensity on the morning of the 18th while moving westward at 12 kt.

The subtropical ridge to the west of T.S. Betty was weakened by a series of middle tropospheric short wave troughs. This produced weak steering currents for the storm and the westward movement slowed to 5 kt. By the 19th the subtropical ridge, influenced by Typhoon Alice, intensified and

receded to the north. In response, Betty began moving northwestward and accelerated to 13 kt.

On the 19th, as a weak upper tropospheric trough to the west deepened, and created a highly efficient outflow channel to the mid-latitude westerlies, Betty began to intensify (Fig. 4-15). By the 20th, Alice had weakened, allowing the subtropical ridge northwest of Betty to build southward. Betty again responded by moving westward. At 0230Z on the 22nd, Typhoon Betty attained a maximum intensity of 95 kt as reconnaissance aircraft recorded a minimum sea-level pressure of 944 mb. The outflow channel to the north (evident on the 19th) was severed by the 21st (Fig. 4-16), but by then Betty had established an outflow channel to the upper tropospheric monsoon easterlies to the south; thus, Betty continued to intensify until the 22nd.

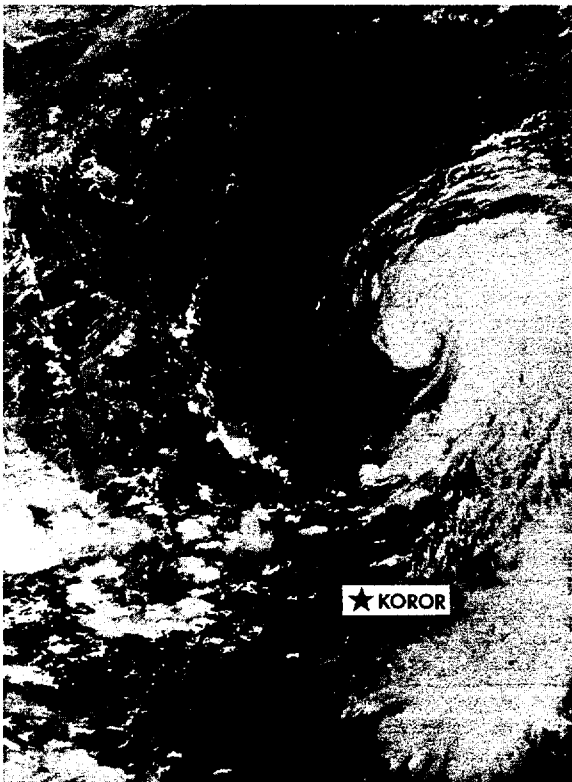


FIGURE 4-15. Betty as a 55 kt tropical storm in the Philippine Sea 720 nm north of Koror, 19 September 1975, 2352Z. (DMSP imagery)

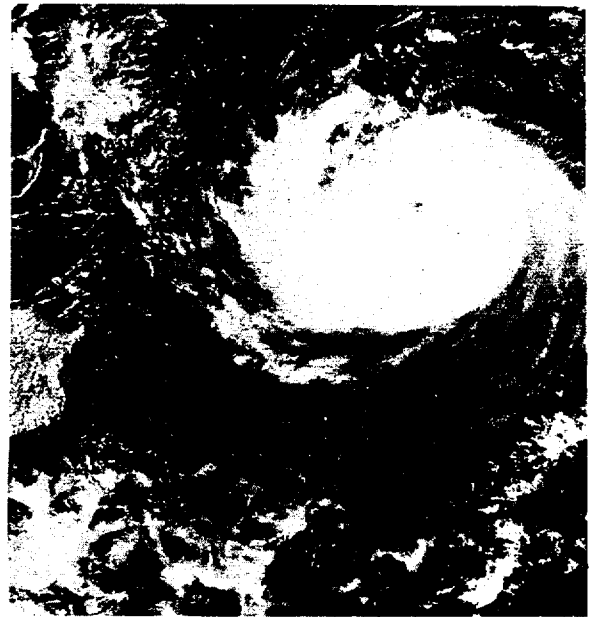


FIGURE 4-16. Typhoon Betty as she heads toward Taitung, Taiwan 400 nm to the west, 21 September 1975, 0315Z. (DMSP imagery)

At 1200Z on the 21st, a ship located 140 nm northeast of the storm estimated winds at 55 kt and seas of 27 ft. The 22 September 0000Z rawinsonde at Ishigakishima (110 nm NNE of Betty) showed 70 kt winds from the 3,000 ft through the 18,000 ft level.

The typhoon, when some 120 nm from Taiwan, was placed under constant surveillance by the radar at Hualien, Taiwan (Fig. 4-17). Figures 4-17a and 4-17b enable comparison of the microwave (radar) presentation and the visible (satellite) presentation. Upon reaching Taiwan, Betty began to weaken. The typhoon's track became west-northwestward as the storm interacted with a lee-side trough created by the high mountain ranges on Taiwan. Packing winds near 80 kt,

Betty crossed into southern Taiwan about 15 nm north of Taitung. Unofficial reports indicated 12 dead, scores injured, and hundreds homeless in the typhoon's wake. Nearly a thousand tourists were stranded as mud slides covered highways. In addition, more than 200 homes were leveled and hundreds of others damaged.

After crossing the mountains of southern Taiwan, the storm's track became west-southwestward. Weakened by the rugged terrain, Betty entered the Taiwan Strait as a minimal typhoon. It continued to weaken and crossed the Chinese coast on the evening of the 23rd with 50 kt winds. By the 24th, Betty had degenerated into a low pressure area some 100 nm north of Hong Kong.

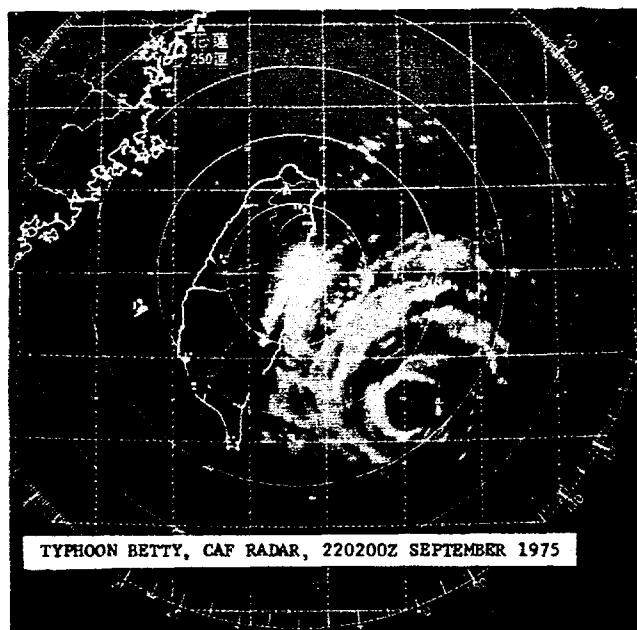


FIGURE 4-17. Radar presentation of Typhoon Betty near peak intensity some 135 nm east of Taitung, 22 September 1975, 0200Z.

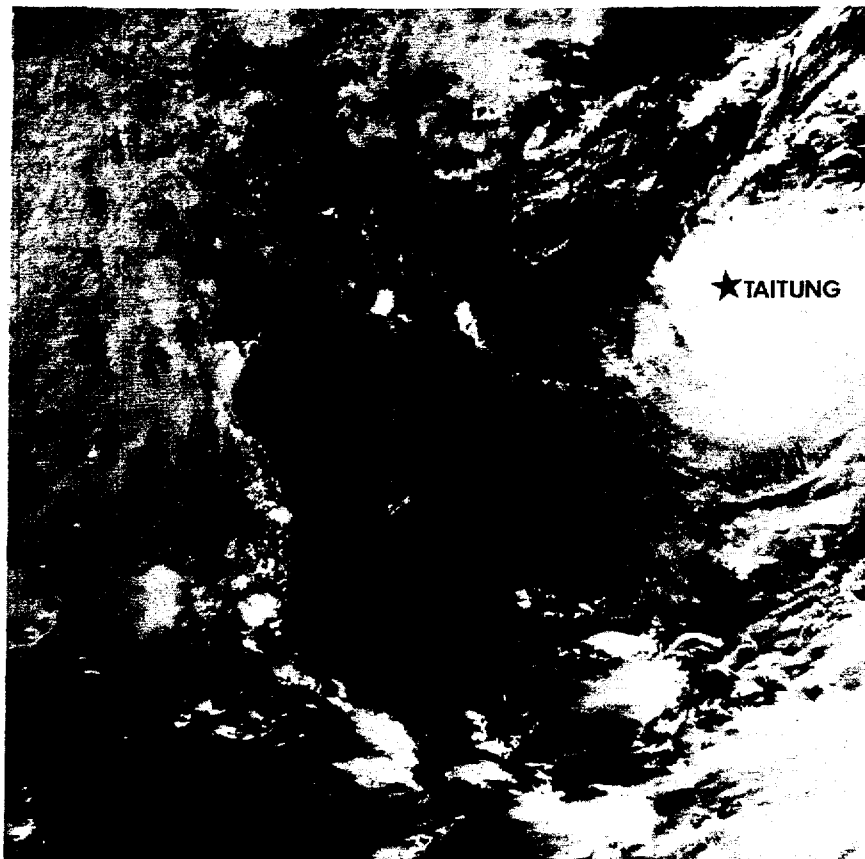


FIGURE 4-17a. Typhoon Betty at 95 kt peak intensity some 135 nm east of Taitung, Taiwan, 22 Sept 1975, 0057Z. (DMSP imagery)

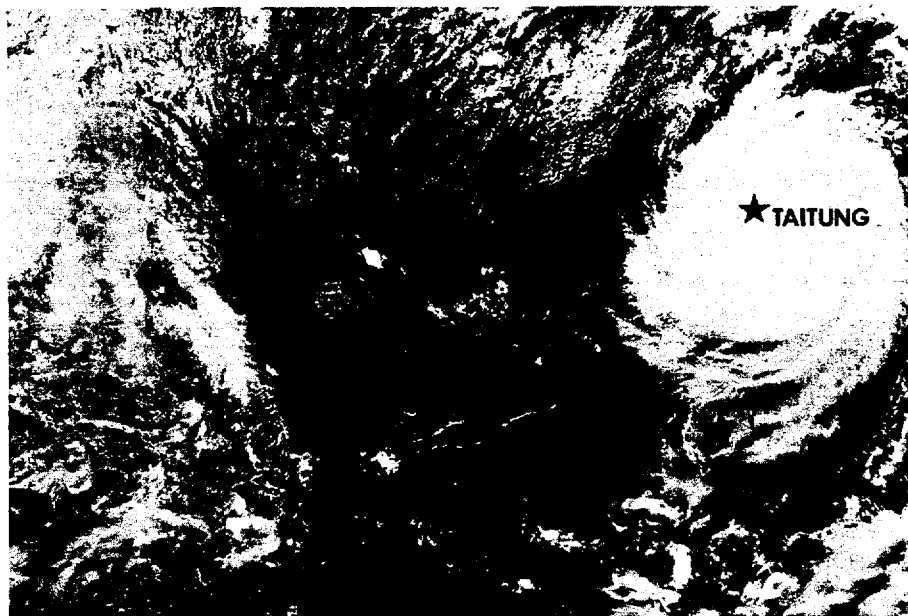


FIGURE 4-17b. Typhoon Betty at peak intensity some 95 nm east of Taitung, 22 Sept 1975, 0438Z. (DMSP imagery)